



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,852	12/09/2003	Kiyonori Oyu	ELPIDA 03USFP943	5218
27667	7590	05/12/2005	EXAMINER	
HAYES, SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701			NGUYEN, THINH T	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 05/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/730,852

Applicant(s)

OYU ET AL.

Examiner

Thinh T. Nguyen

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED OFFICE ACTION

1. Applicant election of claims 1-8 for prosecution without traverse in the communication with the Office on 3/10/2005 is acknowledged.

Specification

2. The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant cooperation is requested in correcting any errors of which the applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(b/e) that form the basis for the rejections under this section made in this office action.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2818

4. Claim 1,2 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchida et al. (U.S. Patent 4,682,200) or under 35 U.S.C. 102(e) as being anticipated by Hidaka et al. (US patent 6,603,685)

REGARDING CLAIM 1

Uchida discloses (in the abstract, in column 7 lines 44-48) a semiconductor memory device comprising: a semiconductor substrate; and gate electrodes formed for a transistor on said semiconductor substrate through a gate insulating film, wherein a gate length of said gate electrode is longer than a minimum processing dimension.

Similarly, Hidaka (column 4 lines 28-32) discloses the same invention.

REGARDING CLAIM 2

Uchida anticipates claim 2 since the channel length (the shortest distance between the drain and source diffusion region of the MOSFET) is inherently the same as the gate length as shown in the disclosure by Tobita (US patent 6,043,638)

Similarly, Hidaka (column 4 lines 28-32) discloses the same invention.

Claim Rejections - 35 USC § 103

5. The following is a quotation of U.S.C. 103(a) which form the basis for all obviousness rejections set forth in this office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2818

6. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art (the AAPA) in view of Bronner (U.S. patent 6,767,789).

REGARDING CLAIM 3-4

The AAPA (as shown in fig 1, fig 2, the background section of the application 0 discloses all the invention except is silent about the gate length that is longer than the processing dimension. Bronner, however (column 2 lines 52-53) discloses that a gate length longer than the processing dimension can be use to cure a leakage problem in DRAM.

It would have been obvious to one of ordinary skill in the art the time the invention was made to complement the teachings by the AAPA with the teachings by Bronner in order to come up with the invention of claim 3-4.

The rationale is as the following:

A person skilled in the art at the time the invention was made would have been motivated to improve the retention time of the DRAM device as suggested by Bronner in column 2 lines 52-53.

Fig. 2 PRIOR ART

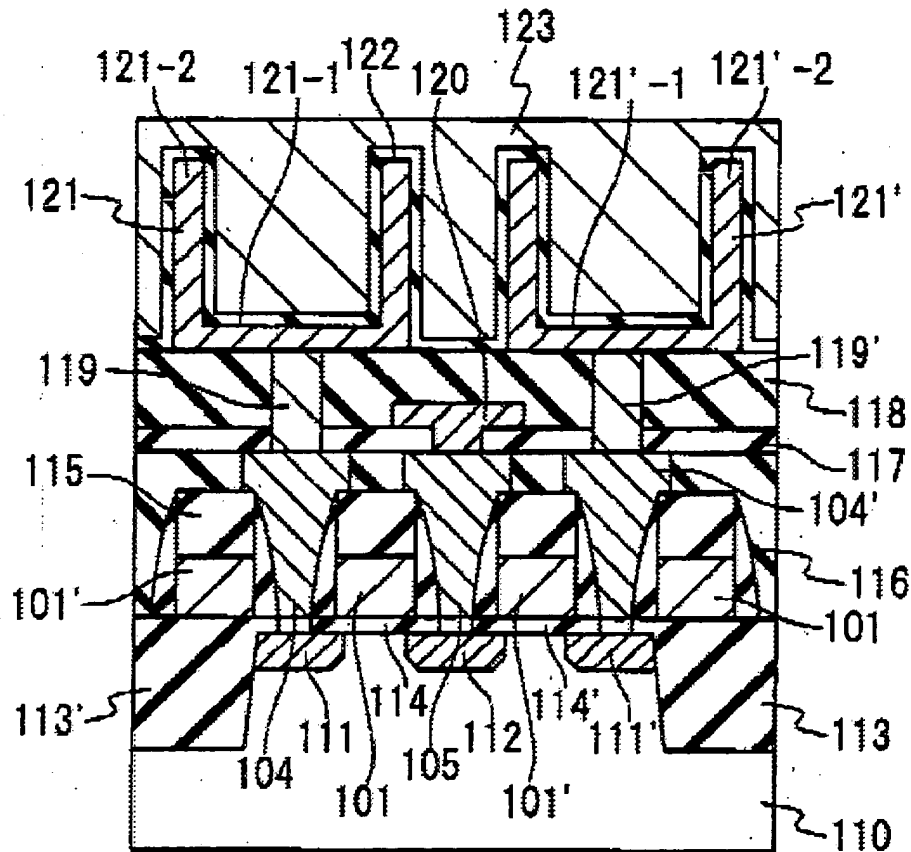
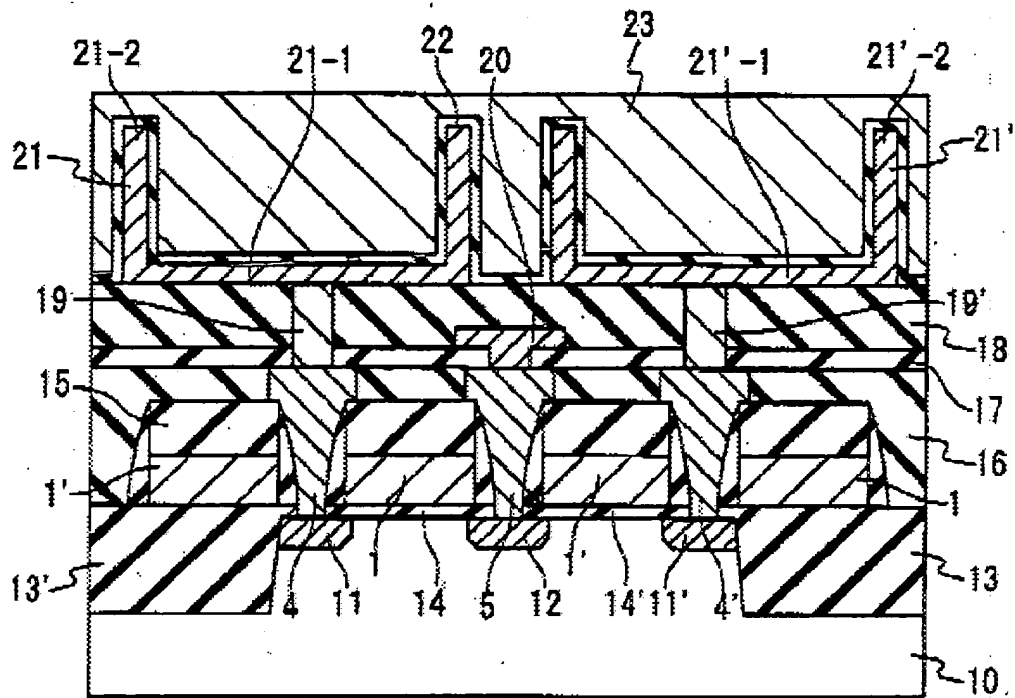


Fig. 5



APPLICANT'S INVENTION

7. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art in view of Bronner et al. (US patent 6,767,789) and in further view remark.

REGARDING CLAIM 5-6

The combined teachings by the AAPA and Bronner disclose all the invention except for the side length of the first contact and the second contact. These features, however, are considered obvious since it has been held that when the general condition of a claim are

Art Unit: 2818

disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

8. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hidaka et al. (US patent 6,603,685) in view of further remark.

REGARDING CLAIM 7-8

Hidaka (column 4 lines 28-32) discloses all the invention except for the impurity concentration or the exact gate length. These features, however, are considered obvious since it has been held that when the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

9. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and the page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

10. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to be abandoned (see M.P.E.P. 710.02(b)).

11. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d) which papers have been placed of record in the file.

CONCLUSION

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thinh T Nguyen whose telephone number is 571-272-1790.

The examiner can normally be reached on Monday-Friday 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached at 571-272-1787.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Thinh T. Nguyen

TTN

Art Unit 2818



David Nelms

Supervisory Patent Examiner
Technology Center 2800